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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/684,388	GELVIN ET AL.	
	Examiner	Art Unit	
	ARAVIND K. MOORTHY	2431	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 May 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-66 and 76-82* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-66 and 76-82* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 May 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This is in response to the communications filed on 19 May 2009.

2. Claims 1-66 and 76-82 are pending in the application.

3. Claims 1-66 and 76-82 have been rejected.

4. Claims 67-75 have been cancelled.

Information Disclosure Statement

5. The examiner has considered the information disclosure statement (IDS) filed on 5/19/2009 and 1/14/2009.

Response to Arguments

6. Applicant's arguments filed 7 April 2009 have been fully considered but they are not persuasive.

On pages 26-27, the applicant argues that Lavian does not teach or suggest: (i) coupling a plurality of network elements in a vehicle, the vehicle including at least one node and at least one vehicle bus that is connected to at least one peripheral electronic device, wherein the at least one node includes at least one gateway node in the vehicle, as recited in claim 1, and (ii) coupling a plurality of network elements in a vehicle, the vehicle including at least one electronic device, at least one node and at least one vehicle bus, wherein the at least one node includes at least one gateway node in the vehicle, as recited in claim 66.

The examiner respectfully disagrees. As shown in figure 4, there are a plurality of network elements connected through the routing switch (i.e. optivity, app server, authentication server and a web server). It is well known in the art that peripheral devices can include devices connected to each other in a network. So as discussed, Lavian discloses multiple network

devices connected together [column 4, lines 37-61]. Lavian discloses the gateway node in figure 10 (i.e. gateway 1011).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-10, 15-18, 21, 25-32, 34-47 and 52-66 are rejected under 35 U.S.C. 102(e) as being anticipated by Lavian et al U.S. Patent No. 6,175,868 B1 (hereinafter Lavian).

As to claim 1, Lavian discloses a method for host vehicle internetworking, comprising:

coupling a plurality of network elements in a vehicle, the vehicle including at least one node and at least one vehicle bus that is connected at least one peripheral electronic device, wherein the at least one node includes at least one gateway node in the vehicle, the gateway node comprising a first processor performing real-time processes and second processor performing remaining processes other than the real-time processes [column 6, lines 11-30];

the at least one node manipulating node information including configuration and security information [column 4 line 62 to column 5 line 22];

the plurality of network elements automatically assembling and configuring in response to the node information [column 4 line 62 to column 5 line 22];

the plurality of network elements coupling the at least one node to at least one remote computer;

the at least one remote computer remotely controlling at least one function of the plurality of network elements [column 4 line 62 to column 5 line 22]; and

the at least one node providing secure interoperability among the plurality of network elements in response to the node information [column 4 line 62 to column 5 line 22].

As to claim 2, Lavian discloses accessing the at least one node and performing at least one function using at least one local development network [column 5, lines 48-58]. Lavian discloses that at least one function is selected from a group consisting of upgrading, diagnosing, and programming [column 5, lines 48-58].

As to claim 3, Lavian discloses manipulating and transferring entertainment software among the plurality of network elements using at least one local development network. Lavian discloses that the entertainment software comprises at least one entertainment feature selected from a group consisting of video, audio, movies, television shows, music, games, and simulations [column 3 line 59 to column 4 line 7].

As to claim 4, Lavian discloses that the at least one vehicle bus comprises at least one bus selected from a group consisting of at least one Original Equipment Manufacturer (OEM) bus, at least one Automotive Multimedia Interface Consortium (AMI-C) bus, at least one external network, and at least one local development network [column 4, lines 37-61].

As to claim 5, Lavian discloses that at least one vehicle bus comprises at least one legacy automotive bus selected from a group consisting of Audio Control Protocol (ACP) buses and Standard Corporate Protocol (SCP) buses [column 6, lines 11-30].

As to claim 6, Lavian discloses coupling at least one peripheral electronic device to at least one OEM bus [column 4, lines 37-61]. Lavian discloses that at least one peripheral electronic device is selected from a group consisting of climate control devices, actuator devices, position location devices, Global Positioning System (GPS) devices, communication devices, cellular telephony devices, processing devices, diagnostic devices; modems, video devices, audio devices, multimedia devices, electronic game devices, sensor devices, switch devices, and device subnetworks [column 4, lines 37-61].

As to claim 7, Lavian discloses coupling the at least one peripheral electronic device to at least one AMI-C bus, wherein the at least one peripheral electronic device is selected from a group consisting of communication devices, position location devices, GPS devices, communication devices, pager devices, cellular telephony devices, processing devices, modems, video devices, audio devices, multimedia devices, electronic game devices, personal digital assistants (PDAs), and wireless local area network (LAN) devices [column 4, lines 37-61].

As to claim 8, Lavian discloses that at least one node comprises at least one interface port selected from a group consisting of Intelligent Data Bus (1DB-C) ports, MOST ports, Institute of Electrical and Electronics Engineers (IEEE) 1394 ports, On-Board Diagnostic-11 (OBD-II) ports, Standard Corporate Protocol (SCP) ports, Audio Control Protocol (ACP) ports, Bluetooth ports, Personal Communications Service (PCS) ports, Global System for Mobile Communications (GSM) ports, and Ethernet ports [column 4, lines 37-61].

As to claim 9, Lavian discloses the method further comprising:

hosting the at least one function on a central network element [column 5, lines 23-33];

distributing the at least one function among the plurality of network elements in response to a coupling of additional peripheral electronic devices to the at least one vehicle bus [column 5, lines 23-33].

As to claim 10, Lavian discloses that at least one node includes at least one gateway node and at least one port node [column 4, lines 37-61]. Lavian discloses that at least one node provides at least one function selected from a group consisting of data processing, data storage, access control, protocol translation, security including service discovery and device authentication, and network control [column 4, lines 37-61].

As to claim 15, Lavian discloses that at least one gateway includes a first gateway coupled to a second gateway [column 4, lines 37-61].

As to claim 16, Lavian discloses coupling the at least one port node to at least one subnetwork [column 4, lines 37-61].

As to claim 17, Lavian discloses coupling a first vehicle bus and a second vehicle bus using the at least one gateway node [column 6, lines 11-31]. Lavian discloses that at least one port node couples the at least one vehicle bus to the at least one peripheral electronic device [column 6, lines 11-31].

As to claim 18, Lavian discloses that at least one port node comprises at least one device selected from a group consisting of at least one processor, at least one memory cache, at least

one wireless modem, at least one network protocol, at least one policy, and at least one wired local area network (LAN) [column 6, lines 11-31].

As to claim 21, Lavian discloses enabling operation of the at least one peripheral electronic device within the network using interactions among the at least one port node and at least one corresponding proxy [column 19, lines 3-41]. Lavian discloses that the at least one port node comprises at least one port node selected from a group consisting of a serial network interface connector (SNIC) and a public network port (PNP) [column 4, lines 37-61].

As to claim 25, Lavian discloses coupling the at least one node to at least one subnetwork comprising at least one device selected from a group consisting of sensor devices, actuator devices, wired network devices, and wireless network devices [column 4, lines 48-67].

As to claim 26, Lavian discloses coupling at least one router of the at least one node to the Internet using at least one device selected from a group consisting of at least one bus and at least one communication device. Lavian discloses that the at least one bus is selected from a group consisting of an IEEE 1394 bus, a MOST bus, an IDB-C bus, and an Ethernet bus. Lavian discloses that at least one communication device is selected from a group consisting of a Bluetooth modem, an IEEE 802.11 radio, and a mobile telephone [column 4, lines 37-61].

As to claim 27, Lavian discloses generating at least one hierarchy of communication alternatives in response to a determined position of a host vehicle [column 5, lines 48-58]. Lavian discloses that a selected communication alternative is used to communicate with at least one local site [column 5, lines 48-58].

As to claim 28, Lavian discloses controlling data processing using at least one processing hierarchy that controls at least one event selected from a group consisting of data classifications,

data transfers, data queuing, data combining, processing locations, and communications among the plurality of network elements [column 3 line 59 to column 4 line 7].

As to claim 29, Lavian discloses distributing the at least one function among the plurality of network elements [column 3 line 59 to column 4 line 7].

As to claim 30, Lavian discloses that at least one function of the at least one node includes at least one function selected from a group consisting of data acquisition, data processing, communication management, data routing, data security, programming, node operation, protocol translation, network management, and interfacing with at least one communication physical layer including cellular telephony, wireline telephone, satellite telephony, packet radio, microwave, optical [column 4, lines 37-61].

As to claim 31, Lavian discloses distributing data processing functions of at least one peripheral electronic device among at least one other processor selected from a group consisting of the at least one node and the at least one peripheral electronic device [column 4, lines 37-61].

As to claim 32, Lavian discloses implementing at least one security method selected from a group consisting of confounder codes, encrypted transmissions, security policy-based communication protocols, blocking coupling with unauthorized devices, and blocking commands from at least one class of device [column 6, lines 31-41].

As to claim 34, Lavian discloses that at least one security method further includes at least one device selected from a group consisting of an ignition key, a password device, a security display, and a designated authorization port [column 4, lines 37-61]. Lavian discloses that at least one connector is coupled to the designated authorization port to receive authorization for coupling a device to the plurality of network elements [column 4, lines 37-61].

As to claim 35, Lavian discloses automatically organizing the plurality of network elements in response to the node information [column 4, lines 37-61]. Lavian discloses that the automatic organizing comprises automatically controlling data transfer, processing, and storage among the plurality of network elements [column 4, lines 37-61].

As to claim 36, Lavian discloses supporting at least one level of synchronization among different subsets of the plurality of network elements [column 4 line 62 to column 5 line 22]. Lavian discloses that a first level of synchronization is supported among a first subset of the plurality of network elements [column 4 line 62 to column 5 line 22]. Lavian discloses that a second level of synchronization is supported among a second subset of the plurality of network elements [column 4 line 62 to column 5 line 22].

As to claim 37, Lavian discloses self-assembling the plurality of network elements [column 2, lines 19-32]. Lavian discloses that search and acquisition modes of the at least one node search for participating ones of the plurality of network elements [column 2, lines 19-32]. Lavian discloses that a determination is made whether each of the participating ones of the plurality of network elements are permitted to join the vehicle internetwork using a message hierarchy [column 2, lines 19-32]. Lavian discloses that the plurality of network elements are surveyed at random intervals for new nodes and missing nodes [column 2, lines 19-32].

As to claim 38, Lavian discloses the method further comprising performing service discovery, wherein service discovery comprises:

synchronizing the at least one node [column 4 line 62 to column 5 line 22];

authenticating the at least one node [column 4 line 62 to column 5 line 22];

determining at least one communication mode for the at least one node [column 4 line 62 to column 5 line 22]; and

informing the at least one node of resources available among the plurality of network elements [column 4 line 62 to column 5 line 22].

As to claim 39, Lavian discloses collecting data using the at least one node. Lavian discloses that at least one operation is performed on the data in response to parameters established by a user, the at least one operation selected from a group consisting of classification, routing, processing, storing, and fusing [column 4 line 62 to column 5 line 22].

As to claim 40, Lavian discloses that the data is vehicle diagnostic data. Lavian discloses that diagnostic operations are performed in response to the data [column 4 line 62 to column 5 line 22].

As to claim 41, Lavian discloses that routing comprises selecting at least one communication type and at least one communication coupling for use in routing the collected data [column 4 line 62 to column 5 line 22].

As to claim 42, Lavian discloses that routing comprises selecting at least one data type for routing [column 4 line 62 to column 5 line 22]. Lavian discloses selecting at least one of the plurality of network elements to which to route the selected data [column 4 line 62 to column 5 line 22]. Lavian discloses selecting at least one route to the selected at least one of the plurality of network elements [column 4 line 62 to column 5 line 22]. Lavian discloses routing the

selected at least one data type to the selected at least one of the plurality of network elements [column 4 line 62 to column 5 line 22].

As to claim 43, Lavian discloses that processing comprises selecting at least one data type for processing, selecting at least one processing type, selecting at least one of the plurality of network elements to perform the selected at least one processing type, and transferring the selected at least one data type to the selected at least one of the plurality of network elements using at least one route through the sensor network [column 4 line 62 to column 5 line 22].

As to claim 44, Lavian discloses aggregating processed data for further processing [column 4 line 62 to column 5 line 22].

As to claim 45, Lavian discloses the method further comprising:

aggregating processed data [column 4 line 62 to column 5 line 22];

reporting aggregated data to at least one user [column 4 line 62 to column 5 line 22].

As to claim 46, Lavian discloses that storing comprises selecting at least one data type for storage, selecting at least one storage type, selecting at least one of the plurality of network elements to perform the selected at least one storage type, and transferring the selected at least one data type to the selected at least one of the plurality of network elements using at least one route through the plurality of network elements [column 4 line 62 to column 5 line 22].

As to claim 47, Lavian discloses that fusing comprises a first node transmitting at least one query request to at least one other node [column 4 line 62 to column 5 line 22]. Lavian discloses that the first node collects data from the at least one other node in response to the at least one query request, and processes the collected data [column 4 line 62 to column 5 line 22].

As to claim 52, Lavian discloses that the at least one node includes sensing, processing, communications, and storage devices supporting a plurality of processing and protocol layers [column 4 line 62 to column 5 line 22].

As to claim 53, Lavian discloses supporting at least one communication mode selected from a group consisting of wireless communications, wired communications, and hybrid wired and wireless communications, as discussed above.

As to claim 54, Lavian discloses that the plurality of network elements include at least one element selected from a group consisting of at least one station gateway, at least one server, at least one repeater, at least one interrogator, and at least one network [column 4, lines 38-61]. Lavian discloses that the at least one network includes wired networks, wireless networks, and hybrid wired and wireless networks, as discussed above.

As to claim 55, Lavian discloses that the at least one network comprises at least one network selected from a group comprising the Internet, local area networks, wide area networks, metropolitan area networks, and information service stations [column 4, lines 38-61].

As to claim 56, Lavian discloses providing remote accessibility using World Wide Web-based tools to data, code, control, and security functions [column 5, lines 48-67]. Lavian discloses that data includes signals [column 5, lines 48-67]. Lavian discloses that code includes signal processing, decision support, and database elements, and wherein control includes operation of the plurality of network elements [column 5, lines 48-67].

As to claim 57, Lavian discloses that the plurality of network elements comprise a plurality of network element sets, as discussed above. Lavian discloses that the plurality of network element sets are layered, as discussed above.

As to claim 58, Lavian discloses the method further comprising:

assembling a first network having a first node density using at least one node of a first type [column 4, lines 38-61];

assembling a second network having a second node density using at least one node of a second type [column 4, lines 38-61];

overlaying the second network onto the first network [column 4, lines 38-61].

As to claim 59, Lavian discloses the method further comprising:

transferring software and data among the plurality of network elements [column 6, lines 1-10],

wherein the transfer is remotely controllable [column 6, lines 1-10];

downloading the software and data from at least one location selected from a group consisting of storage devices of the plurality of network elements, external storage devices, and remote storage devices [column 6, lines 1-10].

As to claim 60, Lavian discloses the method further comprising:

managing the plurality of network elements as at least one distributed and active database using at least one distributed resource management protocol [column 6, lines 1-10];

reusing the plurality of network elements among different applications [column 6, lines 1-10];

using the plurality of network elements in multiple classes of applications [column 6, lines 1-10].

As to claim 61, Lavian discloses transferring data among the plurality of network elements using at least one coupling among the at least one node and at least one external network [column 4, lines 37-61]. Lavian discloses that the data includes vehicle service data, diagnostic data, maintenance history data, security data, electronic mail, and entertainment software [column 4, lines 37-61].

As to claim 62, Lavian discloses transferring data among the plurality of network elements using at least one coupling among the at least one peripheral electronic device and at least one external network, as discussed above. Lavian discloses that the data includes vehicle service data, diagnostic data, maintenance history data, security data, electronic mail, and entertainment software, as discussed above.

As to claim 63, Lavian discloses coupling the at least one node to at least one diagnostic device of a host vehicle [column 4, lines 37-61].

As to claim 64, Lavian discloses that at least one node comprises at least one diagnostic node of a host vehicle [column 4, lines 37-61].

As to claim 65, Lavian discloses manipulating at least one data item selected from a group consisting of vehicle assembly data, vehicle maintenance data, vehicle diagnostics data, vehicle position data, vehicle operations profile data, fleet management data, fleet reliability analysis data, security system data, entertainment system data, and targeted advertising data [column 4, lines 37-61].

As to claim 66, Lavian discloses a method for internetworking, comprising:

coupling a plurality of network elements including at least one electronic device among at least one node and at least one vehicle bus, wherein the at least

one node includes at least one gateway node in the vehicle, the gateway node comprising a first processor performing real-time processes and a second processor performing remaining processes other than the real-time processes [column 6, lines 11-30];

at least one remote computer remotely accessing the plurality of network elements via at least one wireless Internet coupling [column 4 line 62 to column 5 line 22];

the at least one node manipulating network data including configuration and security data [column 4 line 62 to column 5 line 22]; and

the at least one node providing secure and private interoperability among the plurality of network elements [column 4 line 62 to column 5 line 22].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lavian U.S. Patent No. 6,175,868 B1 as applied to claim 10 above, and further in view of Bergkvist, Jr. et al U.S. Patent No. 5,535,380 (hereinafter Bergkvist).

As to claims 11 and 12, Lavian does not teach performing real-time operations using at least one real-time interface processor (RTIP) of the at least one gateway. Lavian does not teach performing high level processing functions using at least one application processor of the at least

one gateway, wherein the at least one gateway further comprises at least one interface port. Lavian does not teach controlling at least one high-speed bus of the at least one RTIP using at least one coupled device, wherein the at least one gateway functions as an Internet Protocol (IP) router.

Bergkvist teaches performing real-time operations using at least one real-time interface processor (RTIP) of the at least one gateway [column 4, lines 15-60]. Bergkvist teaches performing high level processing functions using at least one application processor of the at least one gateway [column 4, lines 15-60]. Bergkvist teaches that the at least one gateway further comprises at least one interface port [column 4, lines 15-60]. Bergkvist teaches controlling at least one high-speed bus of the at least one RTIP using at least one coupled device [column 4, lines 15-60]. Bergkvist teaches that the at least one gateway functions as an Internet Protocol (IP) router [column 4, lines 15-60].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Lavian so that there would have been real-time operations performed using at least one real-time interface processor (RTIP) of the at least one gateway. It would have been performed with high level processing functions using at least one application processor of the at least one gateway, wherein the at least one gateway would have further comprised at least one interface port. The high-speed bus would have been controlled using at least one coupled device, wherein the at least one gateway functions as an Internet Protocol (IP) router.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Lavian by the teaching of Bergkvist because the RTIP

eliminates the effect of various machine functions on latency in executing interrupt requests and which allows for programmability to permit adjustments for particular requirements [column 1 line 65 to column 2 line 2].

As to claim 13, Lavian teaches that at least one item selected from a group consisting of a tag, a bridge, and an interface with the at least one interface port [column 4, lines 37-61].

As to claim 14, Lavian teaches at least one interface port includes at least one port selected from a group consisting of wired communication ports and wireless communication ports [column 4, lines 37-61].

9. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lavian U.S. Patent No. 6,175,868 B1 as applied to claim 10 above, and further in view of Bergkvist, Jr. et al U.S. Patent No. 5,535,380 (hereinafter Bergkvist).

As to claim 19, Lavian does not teach that at least one port node comprises at least one device selected from a group consisting of at least one micro real-time interface processor (RTIP), at least one appliance interface, at least one communication interface, and at least one memory device.

Bergkvist teaches at least one port node comprises at least one device selected from a group consisting of at least one micro real-time interface processor (RTIP), at least one appliance interface, at least one communication interface, and at least one memory device [column 4, lines 15-60].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Lavian so that there would have been at least one port node comprises at least one device selected from a group consisting of at least one micro

real-time interface processor (RTIP), at least one appliance interface, at least one communication interface, and at least one memory device.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Lavian by the teaching of Bergkvist because the RTIP eliminates the effect of various machine functions on latency in executing interrupt requests and which allows for programmability to permit adjustments for particular requirements [column 1 line 65 to column 2 line 2].

As to claim 20, Lavian teaches the method further comprising:

coupling the at least one appliance interface to at least one sensor [column 4, lines 37-61];

coupling the at least one communication interface to at least one radio [column 4, lines 37-61].

10. Claims 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lavian U.S. Patent No. 6,175,868 B1 as applied to claim 1 above, and further in view of Kirby U.S. Patent No. 6,829,437 B2.

As to claims 22-24, Lavian does not teach that at least one node comprises at least one hybrid switch. Lavian does not teach that at least one hybrid switch includes at least one interface port coupled among at least one switch of a first speed and at least one switch of a second speed. Lavian does not teach that each of the at least one switch of a first speed and the at least one switch of a second speed are coupled to at least one port. Lavian does not teach distributing at least one switching function among the plurality of network elements using the at least one hybrid switch. Lavian does not teach coupling at least one application of a first type

through the at least one port to the at least one switch of a first speed. Lavian does not teach coupling at least one application of a second type through the at least one port to the at least one switch of a second speed.

Kirby teaches a node that comprises at least one hybrid switch [column 4, lines 41-54]. Kirby teaches that at least one hybrid switch includes at least one interface port coupled among at least one switch of a first speed and at least one switch of a second speed [column 6, lines 52-63]. Kirby teaches that each of the at least one switch of a first speed and the at least one switch of a second speed are coupled to at least one port [column 6, lines 52-63]. Kirby teaches distributing at least one switching function among the plurality of network elements using the at least one hybrid switch [column 7, lines 19-60]. Kirby teaches coupling at least one application of a first type through the at least one port to the at least one switch of a first speed [column 7 lie 66 to column 8 line 14]. Kirby teaches coupling at least one application of a second type through the at least one port to the at least one switch of a second speed [column 7 lie 66 to column 8 line 14].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Lavian so that a node that comprised hybrid switches. The hybrid switches would have included at least one interface port coupled among at least one switch of a first speed and at least one switch of a second speed. There would have been at least one switch of a first speed and the at least one switch of a second speed that would be coupled to at least one port. At least one switching function would have been distributed among the plurality of network elements using the at least one hybrid switch. At least one application of a first type would have been coupled through the at least one port to the at least

one switch of a first speed. At least one application of a second type would have been coupled through the at least one port to the at least one switch of a second speed.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Lavian by the teaching of Cox et al because the hybrid switches increase the bandwidth of data communication by optimizing the use of resources among nodes. It also reduces the analysis of data required in packet switching and effectively establishes circuit switching through high capacity optical switches [column 1 line 64 to column 2 line 9].

11. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lavian U.S. Patent No. 6,175,868 B1 as applied to claim 1 above, and further in view of Cox et al U.S. Patent No. 6,738,814 B1.

As to claim 33, Lavian does not teach that at least one security method includes blocking denial of service attacks by decoupling at least one port node through which unauthorized access is attempted and blocking at least one application at a decoupled port node.

Cox et al teaches a method for blocking denial of service attacks by decoupling at least one port node through which unauthorized access is attempted and blocking at least one application at a decoupled port node [column 4, lines 16-40].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Lavian so that denial of service attacks would have been blocked by decoupling at least one port node through which unauthorized access is attempted and blocking at least one application at a decoupled port node.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Lavian by the teaching of Cox et al because by blocking denial of service attacks, it keeps from tying up a routing device [column 2, lines 9-12].

12. Claims 48-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lavian U.S. Patent No. 6,175,868 B1 as applied to claim 1 above, and further in view of Vasudevan et al U.S. Patent No. 6,715,077 B1.

As to claims 48-50, Lavian does not teach that the plurality of network elements comprise a plurality of application programming interfaces (APIs). Lavian does not teach that the APIs include APIs for application support, database services, routing, security, network management, and deployment. Lavian does not teach hosting the APIs for application support, database services, and routing on at least one gateway node. Lavian does not teach sharing the APIs for security, network management, and deployment among at least one gateway node and at least one port node. Lavian does not teach layering the plurality of APIs. Lavian does not teach enabling distributed resource management by providing network resource information among the plurality of network elements. Lavian does not teach establishing a synchronism hierarchy in response to the network resource information. Lavian does not teach controlling information transfer among the plurality of network elements using the synchronism hierarchy.

Vasudevan et al teaches a plurality of network elements that comprise a plurality of application programming interfaces (APIs) [column 2 line 63 to column 3 line 31]. Vasudevan et al teaches that the APIs include APIs for application support, database services, routing, security, network management, and deployment [column 2 line 63 to column 3 line 31]. Vasudevan et al teaches hosting the APIs for application support, database services, and routing

on at least one gateway node [column 2 line 63 to column 3 line 31]. Vasudevan et al teaches sharing the APIs for security, network management, and deployment among at least one gateway node and at least one port node [column 2 line 63 to column 3 line 31]. Vasudevan et al teaches layering the plurality of APIs [column 3 line 32 to column 4 line 42]. Vasudevan et al teaches enabling distributed resource management by providing network resource information among the plurality of network elements [column 3 line 32 to column 4 line 42]. Vasudevan et al teaches establishing a synchronism hierarchy in response to the network resource information [column 3 line 32 to column 4 line 42]. Vasudevan et al teaches controlling information transfer among the plurality of network elements using the synchronism hierarchy [column 3 line 32 to column 4 line 42].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Lavian so that there would have been a plurality of network elements that comprised a plurality of application programming interfaces (APIs). The APIs would have included APIs for application support, database services, routing, security, network management, and deployment. The APIs for application would have hosted support, database services, and routing on at least one gateway node. The APIs would have been shared for security, network management, and deployment among at least one gateway node and at least one port node. The plurality of APIs would have been layered. The distributed resource management would have been enabled by providing network resource information among the plurality of network elements. A synchronism hierarchy would have been established in response to the network resource information. Information transfer would have been controlled among the plurality of network elements using the synchronism hierarchy.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Lavian by the teaching of Vasudevan et al because allowing the more specific class to maintain its own data and context and relying on the base class to maintain the general data and context. Therefore, a programmer can reuse code that saves time and can write a more consistently organized program because there is less duplicate code. Each class is independent of other classes, even a subclass is independent of its base class (es), because the class does not need to know about the other classes' data.

13. Claim 51 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lavian U.S. Patent No. 6,175,868 B1 as applied to claim 1 above, and further in view of Chittor et al U.S. Patent No. 5,987,552.

As to claim 51, Lavian does not teach supporting atomic transactions.

Chittor et al teaches a bus protocol for supporting atomic transactions [abstract].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Lavian so that the buses would have supported atomic transactions.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Lavian by the teaching of Chittor et al because it allows for a number of bus transactions that will be completed without interruption [column 2, lines 14-27].

14. Claim 69 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lavian U.S. Patent No. 6,175,868 B1 in view of Chittor et al U.S. Patent No. 5,987,552.

As to claim 69, Lavian discloses a method for host vehicle internetworking, comprising:

coupling a plurality of network elements in a vehicle including at least one node and at least one vehicle bus among at least one peripheral electronic device, wherein the at least one node includes at least one gateway node in the vehicle, the gateway node comprising a first processor performing real-time processes and a second processor performing high level processing functions [column 6, lines 11-30];

automatically assembling and configuring the plurality of network elements in response to the node information [column 4 line 62 to column 5 line 22];

remotely controlling at least one function of the plurality of network elements [column 4 line 62 to column 5 line 22].

Kirby teaches a node that comprises at least one hybrid switch [column 4, lines 41-54]. Kirby teaches that at least one hybrid switch includes at least one interface port coupled among at least one switch of a first speed and at least one switch of a second speed [column 6, lines 52-63]. Kirby teaches that each of the at least one switch of a first speed and the at least one switch of a second speed are coupled to at least one port [column 6, lines 52-63]. Kirby teaches distributing at least one switching function among the plurality of network elements using the at least one hybrid switch [column 7, lines 19-60]. Kirby teaches coupling at least one application of a first type through the at least one port to the at least one switch of a first speed [column 7 lie 66 to column 8 line 14]. Kirby teaches coupling at least one application of a second type through the at least one port to the at least one switch of a second speed [column 7 lie 66 to column 8 line 14].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Lavian so that a node that comprised hybrid switches. The hybrid switches would have included at least one interface port coupled among at least one switch of a first speed and at least one switch of a second speed. There would have been at least one switch of a first speed and the at least one switch of a second speed that would be coupled to at least one port. At least one switching function would have been distributed among the plurality of network elements using the at least one hybrid switch. At least one application of a first type would have been coupled through the at least one port to the at least one switch of a first speed. At least one application of a second type would have been coupled through the at least one port to the at least one switch of a second speed.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Lavian by the teaching of Cox et al because the hybrid switches increase the bandwidth of data communication by optimizing the use of resources among nodes. It also reduces the analysis of data required in packet switching and effectively establishes circuit switching through high capacity optical switches [column 1 line 64 to column 2 line 9].

15. Claims 70-74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lavian U.S. Patent No. 6,175,868 B1 in view of Bergkvist, Jr. et al U.S. Patent No. 5,535,380 (hereinafter Bergkvist).

As to claims 70 and 71, Lavian discloses a method for internetworking, comprising:

coupling a plurality of network elements in a vehicle including at least one node and at least one vehicle bus among at least one peripheral electronic device

[column 6, lines 11-30], wherein the at least one node includes at least one gateway node in the vehicle, wherein the plurality of network elements comprise a plurality of application programming interfaces (APIs) [column 5, lines 48-58];

automatically assembling and configuring the plurality of network elements in response to node information [column 4 line 62 to column 5 line 22];

layering the plurality of APIs [column 5, lines 48-58];

providing a network resource information among the plurality of network elements, wherein the resource information includes network timing information [column 4 line 62 to column 5 line 22];

establishing a synchronism hierarchy in response to the network timing information [column 4 line 62 to column 5 line 22]; and

controlling information transfer among the plurality of network elements using the synchronism hierarchy [column 4 line 62 to column 5 line 22].

Lavian does not teach performing real-time operations using at least one real-time interface processor (RTIP) of the at least one gateway. Lavian does not teach performing high level processing functions using at least one application processor of the at least one gateway, wherein the at least one gateway further comprises at least one interface port. Lavian does not teach controlling at least one high-speed bus of the at least one RTIP using at least one coupled device, wherein the at least one gateway functions as an Internet Protocol (IP) router. Lavian does not teach that the RTIP is configured to perform processing to route packets to appropriate destinations via at least one of the plurality of interface ports.

Bergkvist teaches performing real-time operations using at least one real-time interface processor (RTIP) of the at least one gateway [column 4, lines 15-60]. Bergkvist teaches performing high level processing functions using at least one application processor of the at least one gateway [column 4, lines 15-60]. Bergkvist teaches that the at least one gateway further comprises at least one interface port [column 4, lines 15-60]. Bergkvist teaches controlling at least one high-speed bus of the at least one RTIP using at least one coupled device [column 4, lines 15-60]. Bergkvist teaches that the at least one gateway functions as an Internet Protocol (IP) router [column 4, lines 15-60].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Lavian so that there would have been real-time operations performed using at least one real-time interface processor (RTIP) of the at least one gateway. It would have been performed with high level processing functions using at least one application processor of the at least one gateway, wherein the at least one gateway would have further comprised at least one interface port. The high-speed bus would have been controlled using at least one coupled device, wherein the at least one gateway functions as an Internet Protocol (IP) router. The packets would have been routed to appropriate destinations.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Lavian by the teaching of Bergkvist because the RTIP eliminates the effect of various machine functions on latency in executing interrupt requests and which allows for programmability to permit adjustments for particular requirements [column 1 line 65 to column 2 line 2].

As to claim 72, Lavian teaches that each at least one port node comprises a micro real-time interface processor configured to process data from the at least one sensor [column 4 line 62 to column 5 line 22].

As to claim 73, Lavian teaches that each of at least one port node further comprises a memory cache, coupled to the micro real-time interface processor, configured to store information regarding slot availability to permit networks coupled to different interfaces of each at least one port node to operate asynchronously with respect to one another [column 4 line 62 to column 5 line 22].

As to claim 74, Lavian teaches that at least one gateway node provides a bridge between two or more heterogeneous networks in the vehicle [column 4 line 62 to column 5 line 22].

16. Claim 76 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lavian U.S. Patent No. 6,175,868 B1 as applied to claim 1 above, and further in view of Razavi et al U.S. Patent No. 6,507,810 B2.

As to claim 76, Lavian does not teach that the vehicle comprises a motor vehicle.

Razavi teaches a sub-network in a vehicle that has a motor [column 3, lines 30-41].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Lavian so that the network would have been in a vehicle that comprised a motor vehicle.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Lavian by the teaching of Razavi because the network provides for easy re-configuration and upgrading of the vehicle, as well as improved

communication of information between the vehicle's systems and integration of the vehicle network into external networks [column 2, lines 10-18].

17. Claims 77 and 82 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito et al U.S. Patent No. 7,383,341 B1 in view of Razavi et al U.S. Patent No. 6,507,810 B2.

As to claim 77, Saito discloses a method for internetworking, comprising:

in a vehicle comprising a gateway node, a first vehicle bus that carries communications according to a first communication protocol [column 19, lines 27-33], a second vehicle bus that carries communications according to a second communication protocol [column 19, lines 27-33 and column 20, lines 8-25], and a plurality of network elements [column 19, lines 23-33], wherein the plurality of network elements includes a first set of network elements connected to the first vehicle bus [column 19, lines 23-33], and a second set of network elements connected to the second vehicle bus, the gateway node coupling the plurality of network elements in the vehicle [column 19, lines 23-33];

the plurality of network elements automatically assembling to form a network in which the gateway node provides a bridge between the first vehicle bus and the second vehicle bus, wherein the bridge is operable to pass messages between the first vehicle bus and the second vehicle bus [column 21, lines 1-9];

at least one network element of the assembled plurality of network elements coupling to a remote computer located outside of the vehicle [column 21, lines 3-52]; and

the remote computer remotely controlling at least one function of the assembled plurality of network elements [column 21, lines 3-52].

Razavi teaches a sub-network in a vehicle that has a motor [column 3, lines 30-41].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Saito so that the network would have been in a vehicle that comprised a motor vehicle.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Saito by the teaching of Razavi because the network provides for easy re-configuration and upgrading of the vehicle, as well as improved communication of information between the vehicle's systems and integration of the vehicle network into external networks [column 2, lines 10-18].

As to claim 82, Saito teaches that the first vehicle bus is an original equipment manufacturer (OEM) bus that carries out communication using a controller area network (CAN) [column 19, lines 34-40]. Saito teaches that the second vehicle bus comprises a bus that carries out communications using a protocol selected from the group consisting of (i) an IEEE 1394 protocol, (ii) a MOST protocol, and an intelligent bus (IDB-C) protocol [column 20, lines 26-38].

18. Claim 78 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lavian U.S. Patent No. 6,175,868 B1 and Razavi et al U.S. Patent No. 6,507,810 B2 as applied to claim 77 above, and further in view of Hardjono U.S. Patent No. 6,425,004 B1.

As to claim 78, the Lavian-Razavi combination does not teach that the gateway node instructs a misbehaving network element of the plurality of network elements to shut down.

Hardjono teaches shutting down a misbehaving device in a network domain by isolating the network device [column 3, lines 52-60].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Lavian-Razavi combination so that the gateway node would have shut down a misbehaving network device on the network by isolating the network device.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Lavian-Razavi combination by the teaching of Hardjono because by shutting down a misbehaving device you prevent performance degradation, data loss, or even total failure within the network [column 3, lines 52-60].

19. Claim 79 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lavian U.S. Patent No. 6,175,868 B1 and Razavi et al U.S. Patent No. 6,507,810 B2 as applied to claim 77 above, and further in view of Ober et al US 2001/0056540 A1.

As to claim 78, the Lavian-Razavi combination does not teach the gateway node blocking the communication of at least one message between the first vehicle bus and the second vehicle bus.

Ober teaches blocking communication between a primary and a secondary bus [0008].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Lavian-Razavi combination so that the gateway node would have blocked communication between the first and second vehicle bus.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Lavian-Razavi combination by the teaching of Ober

because it provides a method for better protecting secure data and prevents unauthorized access to a storage area [0007].

20. Claims 80 and 81 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lavian U.S. Patent No. 6,175,868 B1 as applied to claim 1 above, and further in view of Kirby U.S. Patent No. 6,829,437 B2.

As to claim 80, the Lavian-Razavi combination does not teach that at least one node comprises at least one hybrid switch. The Lavian-Razavi combination does not teach that at least one hybrid switch includes at least one interface port coupled among at least one switch of a first speed and at least one switch of a second speed. The Lavian-Razavi combination does not teach that each of the at least one switch of a first speed and the at least one switch of a second speed are coupled to at least one port. The Lavian-Razavi combination does not teach distributing at least one switching function among the plurality of network elements using the at least one hybrid switch. The Lavian-Razavi combination does not teach coupling at least one application of a first type through the at least one port to the at least one switch of a first speed. The Lavian-Razavi combination does not teach coupling at least one application of a second type through the at least one port to the at least one switch of a second speed.

Kirby teaches a node that comprises at least one hybrid switch [column 4, lines 41-54]. Kirby teaches that at least one hybrid switch includes at least one interface port coupled among at least one switch of a first speed and at least one switch of a second speed [column 6, lines 52-63]. Kirby teaches that each of the at least one switch of a first speed and the at least one switch of a second speed are coupled to at least one port [column 6, lines 52-63]. Kirby teaches distributing at least one switching function among the plurality of network elements using the at

least one hybrid switch [column 7, lines 19-60]. Kirby teaches coupling at least one application of a first type through the at least one port to the at least one switch of a first speed [column 7 lie 66 to column 8 line 14]. Kirby teaches coupling at least one application of a second type through the at least one port to the at least one switch of a second speed [column 7 lie 66 to column 8 line 14].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Lavian-Razavi combination so that a node that comprised hybrid switches. The hybrid switches would have included at least one interface port coupled among at least one switch of a first speed and at least one switch of a second speed. There would have been at least one switch of a first speed and the at least one switch of a second speed that would be coupled to at least one port. At least one switching function would have been distributed among the plurality of network elements using the at least one hybrid switch. At least one application of a first type would have been coupled through the at least one port to the at least one switch of a first speed. At least one application of a second type would have been coupled through the at least one port to the at least one switch of a second speed.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Lavian-Razavi combination by the teaching of Cox et al because the hybrid switches increase the bandwidth of data communication by optimizing the use of resources among nodes. It also reduces the analysis of data required in packet switching and effectively establishes circuit switching through high capacity optical switches [column 1 line 64 to column 2 line 9].

As to claim 81, Lavian teaches that the gateway node comprises a first processor performing real-time processes and a second processor performing high level processing functions [column 6, lines 11-30].

Conclusion

21. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ARAVIND K. MOORTHY whose telephone number is (571)272-3793. The examiner can normally be reached on Monday-Friday, 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William R. Korzuch can be reached on 571-272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Aravind K Moorthy/
Examiner, Art Unit 2431

/William R. Korzuch/
Supervisory Patent Examiner, Art Unit 2431